

PHYSICS SKILLS RUBRIC

Michaelsen

Aim for the “5” !!

	1	2	3	4	5
SK-1 Reporting numbers	Poor use of significant figures, scientific notation, and units		Errors /omissions in use of significant figures, scientific notation and units	Small errors in use of significant figures, scientific notation, units.	Demonstrates correct significant figures, scientific notation, and units in calculations
SK –2 Work Quality in Problem Solving / Equations	While a solution may have been calculated, little to no work is shown.		Organization of work is weak. Steps are not shown, or are difficult to follow, or careless errors are made.	Demonstrates good ability in solving equations and showing work, with some minor errors or omissions.	Demonstrates high ability to solve an algebraic equation for a given variable.—shows work (organized, GUESS method), answer given with correct units.
SK –3 Algebraic/Math Skills	Weak math skills – cannot properly apply or solve the math needed.		Numerous errors in using math in problem-solving.	Generally good application of math in problem-solving, with some errors present.	Correctly applies and solves the math required in problem solving (algebra, trig, etc.)
SK –4 Timeliness	Often late in completing or making up work.	Occasionally late in completing or making up work.			Consistently completes or makes up work on time, according to course expectations
SK-5 Lab: Graphing by Computer	Minimal effort made to learn computer graphing. Mostly expects others to do the work.		Strong ability to input data, produce graph, perform curve fit using Excel, Vernier software.	Competent in graph making, though some errors are apparent, or weakness on some aspect of software use.	Shows strong ability to input data, produce graph, perform curve fit using Excel, Vernier software.
SK –6 Lab Work	Does not participate in lab work, cannot demonstrate competency.	Little participation in lab work, or improper/unsafe practices, or inability to follow directions	Some participation in lab work, allows others to do most work; demonstrates weak competence in lab work.	Good ability in skills listed for “5”, but may have a weak area.	Strong ability in following directions, recording data, proper/safe use of equipment, and participating in the lab work.
SK –7 Lab: Reports / Notebook Format (note: “human error” = automatic rewrite!)	Format not followed. Proofreading was not done.	One or more sections of lab missing.	Significant errors in format and/or proofreading.	Lab writing basically follows format and was mostly proofread – some minor errors.	Lab report or notebook follows given format. No errors—proofreading is apparent. Data, Graphs, Calculations are complete and correct.
SK –8 Lab: Presentations	Group effort was minimal. Major errors in understanding. Quality and/or organization are very weak.		More than one aspect of a '5' is weak—quality, organization, participation, understanding.	One aspect of a '5' is weak—quality, organization, participation, understanding.	Presentation is high-quality, organized. All group members participated and demonstrated an excellent understanding of the lab and its results.
SK –9 Group Work / Whiteboarding	Minimal participation in group work.		Some participation in group work.	Good participation in group work. May need to balance the work between partners.	Outstanding group work – participates while allowing others their part.
SK –10 Projects / Competitions	Project shows little effort to plan and apply physics. Poor craftsmanship.		Project quality is weak. Planning and application of physics is weak.	Good quality project, planning or application of physics concepts is somewhat lacking.	High-quality project demonstrates good planning, craftsmanship, and application of physics concepts.

Rubric

A rubric will be used to show the level of achievement for each standard.

Each standard is worth 5 points, or a multiple of 5.

(Ex: a really important or challenging standard may be worth 10 or 15 points, 2 or 3 times the 5 point rubric).

5	High achievement. Demonstrates thorough understanding; can apply and extend concepts. The content of the work is clear and comprehensible. [4.5] – may be given for high level of achievement / understanding, but with minor notation, algebraic or other errors.
4	Good level of understanding, with some errors; content of work unclear in some areas.
3	Demonstrates some basic understanding, but with significant gaps and errors. Work shown is hard to follow.
2	Shows very limited understanding. Ex: May have done some math, but you don't demonstrate physics understanding. Includes "trial and error" in numbers/equations – demonstrates that you don't know what to do! Work may be difficult to follow.
1	Attempts the problem / question
0	No attempt made to answer